REMARKS

Applicants submit this response to the Office Action dated December 3, 2002, Paper No. 24 Claims 3, 4, 6-8, 13, 22, 65, and 66 are currently under examination. Following the above amendments, and as further discussed below in the context of the Examiner's rejections, claim 4 has been cancelled and 6, 13, 65, and 66 have been amended. Applicants submit that each of these amendments is supported in the application as filed and no new matter has been added. It is also noted that each of the above amendments is made without prejudice to prosecution of any or all subject mater modified by this amendment in a related divisional, continuation and/or continuation-in-part application. Reconsideration of the application is requested in view of the following remarks.

Rejection Under 35 U.S.C. § 101/112 (Utility)

Claims 3, 4, 6-8, 13, 22, 65, and 66 stand rejected under 35 U.S.C. § 101 as allegedly lacking a patentable utility due to the claims not being supported by either specific and/or substantial utility or a well established utility. More specifically, the Examiner alleges that the claimed nucleic acid sequence, SEQ ID NO:198, is not supported by a specific asserted utility because the disclosed use of this composition is not specific and is generally applicable to any nucleic acid. Applicants respectfully traverse this rejection.

Applicants have identified a specificity associated with the claimed polynucleotide, *i.e.,* ovary tumor-specificity, that is sufficient to establish utility under 35 U.S.C. §101. In the instant application, the claimed polynucleotide, SEQ ID NO:198, was identified using the POTS 2 subtraction library as described on page 91, lines 8 through 17 and Table VII, page 99 through page 100. The POTS 2 library was generated using tracer cDNA derived from primary ovarian tumor tissue subtracted against a selection of normal tissues. Further, on page 6, line 19 through page 7, line 3, ovarian tumor proteins, and the polynucleotides encoding said proteins, are identified by their increased level of expression in ovarian tumor samples. More particularly, at page 6, line 19, through page 20, line 3, the specification discloses that polynucleotides of the invention are "expressed at a level that is at least two fold greater than the level of expression in normal tissues." Accordingly, the ovarian tumor specificity of SEQ ID NO:198 was clearly disclosed in the specification as filed.

The Examiner also contends that the Declaration of Paper No. 23 (filed 27 September 2002) only notions the comparison to normal ovarian tissue and is deficient for failure to specifically compare the expression levels of the tumorous ovarian tissue and normal ovarian tissue. Applicants, submit that the Dr. Steven P. Fling states in the Declaration that "SEQ ID NO:198, as described in the specification is clearly over-expressed in ovarian tumors relative to normal tissue." Paper No. 23, p. 1, line 7. Additionally, Dr. Fling states that SEQ ID NO:198 "was shown to be over-expressed in over 65% of ovarian tumor samples tested, 50% of tumor samples derived from SCID mice, and 35% of ovarian tumor cell lines test, when compared to normal ovarian tissue." Paper 23, p. 2, lines 14-17. The two statements combined convey the clear intended meaning that SEQ ID NO:198 is over-expressed in ovarian tumors as compared to normal ovarian tissue.

However, in order to expedite prosecution, the applicant submits herewith a new Declaration of Steven P. Fling, Ph.D. It demonstrates, using Real-Time PCR analysis, that SEQ ID NO:198, clone 57886 or O590S, was shown to be over-expressed in over 65% of ovarian tumor samples tested, 50% of tumor samples derived from SCID mice, and 35% of ovarian tumor cell lines tested, when compared to both normal ovarian tissue and an extensive panel of normal tissue. Specifically, three normal ovarian tissue samples were analyzed by Real Time PCR for expression of SEQ ID NO:198, clone 57886 or O590S. Two normal ovarian samples showed little or no expression of O590S. Some low level expression was observed in the third normal ovarian sample. The expression levels in this normal ovarian sample were at least 10 fold lower than the levels observed in ovary tumors over-expressing O598S (SEQ ID NO:198). Therefore, the Applicants assert that SEQ ID NO:198 has the specific, substantial, real-world utility of providing a diagnostic tool for certain ovarian cancers.

The Examiner also contends that the specification does not provide guidance for a suitable primers for the sequence amplification. Specifically, the examiner states that no statement of the particular or suitable primer to be used for amplification is found within the specification. Applicants have provided the sequence of SEQ ID NO:198. Moreover, the specification states that in PCT "two primer sequences are prepared which are complementary to regions on opposite complementary strands of the target sequence." Specification, pg 39, lines 14 & 15. Because, the entire sequence of SEQ ID NO: 198 is over-expressed in ovarian cancer as

compared to normal ovarian tissue, the skilled artisan would recognize that a useful primer could be constructed using any region of SEQ ID NO:198 or other claimed sequence.

The Examiner further alleges that the specification does not teach or suggest which residues of the elected sequence, SEQ ID NO:198, are responsible for the specific analysis or detection process claimed. The Examiner also alleges that, concerning the 50 contiguous nucleotides, no utility would result from detection, unless the functional or active residues responsible for the ovarian tumor-specificity are within that set 50 nucleotides. Applicants respectfully traverse this rejection.

The Examiner admits that the skilled artisan would recognize that because all the residues of SEQ ID NO: 198 are over-expressed in ovarian cancer any 50 contiguous residues would also be over-expressed. However, the Examiner maintains that the claims include sequences other that SEQ ID NO: 198 that contain at least 50 contiguous residues, which the Examiner argues could point to a sequence other than SEQ ID NO: 198. To this end the examiner cites GenBank accession number AI023799 which allegedly has 100% identity to 210 contiguous nucleic acids of SEQ ID NO: 198. As the Examiner states AI023799 was derived from male live and spleen. Certainly, a male patient will not be screened for ovarian cancer. Applicants submit that based on the disclosure that SEQ ID NO:198 is over-expressed in ovarian cancer, one of skill in the art would appreciate that all residues of SEQ ID NO:198 would be over-expressed in ovarian cancer relative to normal ovarian tissue. Based on this understanding, the skilled artisan would recognize that **any** 50 contiguous nucleotides of SEQ ID NO:198 would be over-expressed in ovarian cancer and therefore useful in the detection of ovarian cancer. Accordingly, the skilled artisan would could the claimed sequences diagnose ovarian cancer in a patient suspected of having ovarian cancer (a female patient).

Thus, in view of the description in Applicants' specification as originally filed, and as further confirmed by the attached Declaration of Dr. Steve Fling, applicants submit that one of ordinary skill in the art would fully recognize that SEQ ID NO:198 has diagnostic utility on the basis of its ovary-tumor associated expression profile. Reconsideration and withdrawal of the rejection is respectfully requested.

Rejection Under 35 U.S.C. § 112, first paragraph, Written Description

Claims 3, 4, 6-8, 13, 22, 65 and 66 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly not being described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the Inventors, at the time the application was filed, had possession of the claimed invention. More specifically, the Examiner alleges that the specification does not disclose each and every possible sequence that is encompassed by the claimed genus.

Applicants respectfully traverse this ground of rejection. The claims recite the limitation "useful in the detection of ovarian cancer." The present application is directed to Applicants' discovery of sequences which are differentially expressed in ovarian cancer relative to normal ovarian tissue. The instant specification is replete with guidance on the tumor specificity of SEQ ID NO:198.

The Examiner, however, asserts that while the written description requirement is met for the exact full-length sequence of SEQ ID NO: 198, that the specification does not disclose each and every possible sequence encompassed by the claims genus, *i.e.*, sequences comprising SEQ ID NO: 198 and sequences that comprise at least 50 contiguous residues of SEQ ID NO: 198. Applicants respectfully traverse this ground of rejection. First, the U.S.P.T.O. has indicated that possession of an invention is more readily established, and correspondingly greater claim breadth is permissible, where an applicant discloses functional and/or descriptive information concerning the specie(s) in an application, e.g., a distinguishing identifying characteristic common among all the members of a claimed genus (see *Guidelines for Examination of Patent Applications Under the 35 U.S.C. § 112, para. 1, "Written Description" Requirement*-Federal Register: January 5, 2001 (volume 66, No. 4, pgs 1099-1111). For example, at the bottom of page 1105, the guidelines state that "(a)n adequate description of the invention may be shown by any description of sufficient, relevant, identifying characteristics so long as a person skilled in the art would recognize that the inventor had possession of the claimed invention". Applicants believe that their disclosure of the tumor-specific profile of SEQ ID NO:198 provides a relevant identifying characteristic that more than adequately meets this burden.

Moreover, according to the Guidelines for the Examination of Patent Applications under the 35 U.S.C. § 112, para. 1., "Written Description: Requirement)Federal Register: January 5, 2001 Volume 66, No.4, pgs 1099-1111), for example, on page 1106:

> A "representative number of species" means that the species which are adequately described are representative of the entire genus....there may be situations where one species adequately supports a genus. What constitutes a "representative number" is an inverse function of the skill and knowledge in the art.

Applicants submit that based on the disclosure of SEQ ID NO:198 and its identifying characteristic of being over-expressed in ovarian cancer, the skilled artisan would recognize that Applicants were in possession of much more than just SEQ ID NO:198. Rather the skilled artisan in this area of technology would view the disclosure of the species of SEQ ID NO: 198, taken in conjunction with the identified tumor specificity for this sequence, as more than adequately supportive of the genus currently claimed, i.e., sequences comprising SEQ ID NO: 198 and sequences comprising at least 50 contiguous nucleotides of SEQ ID 198. Thus in this instance, Applicants submit that a "representative number of species" to support the currently claimed genus was disclosed by Applicants' specification and would be recognized as such by the ordinarily skilled artisan.

Given all of the above illustrative guidance in Applications specification as originally filed, Applicants submit that the skilled artisan would recognize that Applicants were in possession of the claimed invention at the time of filing. Reconsideration of the Examiner's rejection is thus respectfully requested.

Rejection Under 35 U.S.C. § 112, second paragraph

Claims 3, 13, 22, 65, and 66 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. More specifically, the Examiner alleges that claims 3, 13, 22, 65, and 66 are vague and indefinite due to the lack of clarity of the phrase "comprise a sequence selected from." The Examiner contents that it is unclear as to what the metes and bounds of the parameters of these claims.

Applicants respectfully traverse this rejection. The transitional phrases "comprise" or "comprising" have a long history and well established meaning in patent claims. "comprising" is synonymous with including, containing, or characterized by, and is inclusive or open-ended and does not exclude additional, unrecited elements. See MPEP § 211.03. Thus, the rejected

claims "comprise," "include" or are "characterized by" sequences that are selected from the Markush Group of claims 3, 13, 22, 65, and 66. There is nothing indefinite or unclear about an open-ended set. For example, one may claim a vehicle comprising a wheel and an axel. Such a claim would clearly and definitely encompass anything from a one-wheeled unicycle to a complex motor vehicle having four wheels, two axles and an infinite number of accessories (stereo, windows, seat belts, beverage holders, etc.) Likewise the clear language of the claims include the sequences recited in the Markush Groups and other additional, unrecited elements. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 13, 65, and 66 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. More specifically, the Examiner alleges that claims 13, 65, and 66 are vague and indefinite as to what is meant therein by the limitation "at least 90% identity to SEQ ID NO: 198."

This rejection is respectfully traversed. Applicants submit that the skilled artisan, in view of Applicants' specification and in view of the general knowledge in the art, would have no difficulty understanding the metes and bounds of the presently claimed invention. However, for purposes of clarity only, applicants have amended claims 13, 65, and 66, to recite "at least 90% identity to the entirety of SEQ ID NO: 198." Reconsideration and withdrawal of the rejection is respectfully requested.

Claim 6 stands rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. More specifically, the Examiner alleges that claim 6 is vague and indefinite as to what is meant therein by the limitation "complementary."

This rejection is respectfully traversed. Applicants submit that the skilled artisan, in view of Applicants' specification and in view of the general knowledge in the art, would have no difficulty understanding the metes and bounds of the presently claimed invention. However, for purposes of clarity only, applicants have amended claim 6, such that the polynucleotide sequences of claim 6, encompass the complete complement (support for which can be found on page 32, line 3) of the claimed polynucleotide sequences, *i.e.,* sequences completely complementary to SEQ ID NO:198 and sequences completely complementary to sequences

having at least 90% identity to SEQ ID NO:198. Reconsideration and withdrawal of the rejection is respectfully requested.

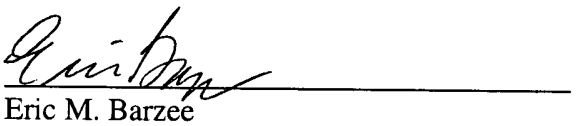
Rejection Under 35 U.S.C. § 102

Claims 3, 4, 6-8, and 22 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by US Patent Nos. 5,585,232 and 5,589,337. More specifically, the Examiner alleges that the two patents accession numbers are disclose diagnostic kits using a sequence that meet the limitations set in claims 65 and 66. Applicants respectfully submit, that the cited patents do not disclose diagnostic kits for the detection of ovarian cancer but relate to the toxicity of e. coli. Thus the cited patents do not contain each and every limitation of claims 65 and 66. However, in order to speed up prosecution, claim 65 and 66 have been amended to recite nucleotides that do fall outside the limits of the primer disclosed in the cited US patents. Reconsideration and withdrawal of the rejection is respectfully requested.

Favorable reconsideration and allowance of the pending claims are respectfully requested. The Examiner is invited to contact the undersigned with any questions, concerns or suggestions pertaining to this communication.

Respectfully submitted,

Corixa Corporation



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Declaration of Steven P. Fling Ph.D.

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